

ABSTRACT OF THE DISCLOSURE

A fuel cell system of the invention includes a tubular switching member 70 with slits 70a to shift their position and thereby vary an opening area of outlets of oxidizing gas conduits 36 in respective unit fuel cells 30 constituting a fuel cell stack 20. The system further includes a drive roller 74 and a stepping motor 79 that function to change over the position of the slits 70a. An electronic control unit controls rotation of the stepping motor 79 to actuate the tubular switching member 70 first to narrow the opening area of the outlets of the oxidizing gas conduits 36 to or toward 0 and then to widen the opening area of the outlets of the oxidizing gas conduits 36, thereby generating pulsation in the oxidizing gas conduits 36. Water droplets flocculated in the oxidizing gas conduits 36 are thus discharged to the outlets with high efficiency. The structure of the embodiment does not require any bypass in the respective unit fuel cells 30. The characteristic structure of the invention uses the frame of the unit fuel cell 30 equivalent to the existing one and does not substantially increase the size of the fuel cell stack 20.